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# Climate and the Republic of *Zimbabwe*:

*Can today's climate science help avert tomorrow's catastrophe?*

**The Issue**

"Throughout the region people are walking a thin tightrope between life and death. The combination of widespread hunger, chronic poverty and the HIV/AIDS pandemic is devastating and may soon lead to a catastrophe..."

-United Nations World Food Programme (UN/WFP) Press release July 11, 2002

Zimbabwe is currently experiencing one of its worst droughts in the last twenty years. The impact of this event is conditioned by a population made vulnerable by widespread poverty, reduced food production and internal conflict associated with land reform policies, national involvement in regional conflicts such as the Congo, and the destructive consequences of high rates of HIV/AIDs infection. The current food crisis places almost half of its close to 12 million population at risk[1]. The UN/WFP and the Food and Agriculture Organization (FAO) have issued pleas for immediate assistance from donor countries in order to avert starvation and loss of life.

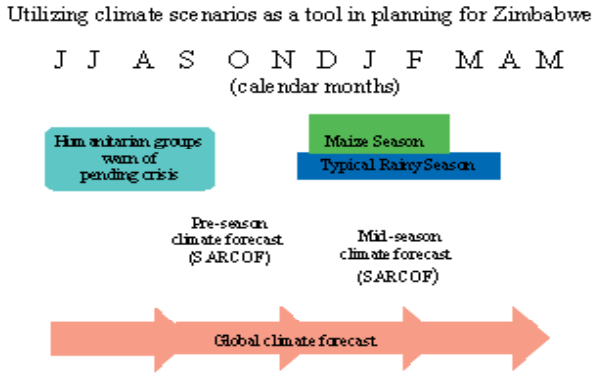
Among the factors that could play a role in shaping the fate of Zimbabwe is the environmental phenomenon of El Niño. As of the end of July 2002, experts with the International Research Institute (IRI) for climate prediction and the Climate Prediction Center of the US National Oceanic and Atmospheric Administration (NOAA/CPC) are calling for a weak-to-moderate El Niño event. Although the El Niño as currently forecasted is less severe climatologically than the events of the 1980s and 1990s, the context within which this climate event will play out undoubtedly will exacerbate the effects.

The question today, almost a year ahead of when the results of the 2003 harvest will be most vivid, is what this scientific insight offers in terms of the impetus or ability to act in ways that could reduce the near-term suffering, and eventually may be part of efforts to foster some degree of sustainability within the region.

**Climate and Natural Resources**

Zimbabwe's social and economic well being is tightly linked to its relatively dry climate. The country has two major agro-ecological zones: a) the northwestern region, which receives the highest amounts of precipitation during the rainy season, and the area where most of the commercial farming activities take place; and b) the southwestern sector, a semi-arid zone with marginally productive subsistence agriculture. This difference in the fundamental precipitation patterns of Zimbabwe increases the vulnerability of some areas to seasonal variations in climate. Maize, tobacco, cotton, and coffee, all play an important role in the government's capacity to generate export earnings. Of the two regions, the southwestern sector is experiencing greater impacts of the current drought, which began with the 2000-2001 rainy season.

Over 60% of Zimbabwe's population depends on rainfed agriculture for their livelihood[2]. The annual rainy season – which typically spans the months of November through March or April – dictates the production cycle of the country's staple food, maize. The short lifecycle characteristics of maize can make it particularly vulnerable to drier conditions during the rainy season.




The warm phase of the El Niño-Southern Oscillation (ENSO) phenomenon tends to be associated with reduced precipitation and increased temperatures in Zimbabwe. It is important to note, however, that all areas within the country do not experience El Niño events in the same way, or with the same intensity and impact due to local physical, climatological and socio-economic conditions. Furthermore, the impact in a particular region can vary from El Niño event to El Niño event, depending on the magnitude of the episode.

El Niño events influenced the climate of southern Africa in quite substantial ways during the years 1982-1983 and 1991-1992; the impact has been less severe in events such as that which

occurred during 1997-1998. The international humanitarian community intervened in this region with food aid during all three events in order to mitigate the related shortfall in domestic agricultural production. Sixty percent of El Niño events since 1885 coincide with drought in Zimbabwe[3]. One of the worst droughts in southern Africa occurred during 1991-1992; regional grain production dropped from 11 million metric tons to less than half that amount[4].

The IRI and NOAA are calling for a weak to moderate El Niño event that will last through the remainder of 2002, and into 2003[5]. While the exact implications of this forecast for Zimbabwe are not certain, history indicates that the country is likely to face yet another season of unusually dry conditions. In Zimbabwe, the most opportune time to utilize seasonal climate forecast information is several months before the start of the rainfall season (August-September). In December or January, a mid-season outlook can be used to update the pre-season forecast, and to outline prospects for the remaining months of the season. In September of this year, an international forum of climate experts and decision makers from throughout southern Africa and around the world will meet in Harare, Zimbabwe to consider and issue a statement regarding the potential implications of the global climate outlook for the region and its critical social and economic sectors[6].

**Linking Climate Information and Disaster Preparedness**

In the case of the unfolding humanitarian crisis in Zimbabwe, to what extent can planning be informed by climate forecast information and detailed climate impact scenarios? Is there a contribution to be made by the climate research community to the resolution of this multifaceted and tragic set of circumstances?

Efforts that emerged in response to previous environmental crises in the region may be well positioned to help alleviate the impending disaster with the support of national, regional and international organizations, including the Southern African Development Community (SADC), the Drought Monitoring Center in Harare (DMCH), the World Bank, the IRI, the US Agency for International Development (USAID), and NOAA. The National Meteorological Service of Zimbabwe collaborates with the DMCH to supply climate information to farmers, water mangers, humanitarian organizations and other policy and decision makers. Zimbabwe is an important participant in efforts to tailor, interpret and disseminate regional climate information via the Southern African Regional Climate Outlook Forum (SARCOF) process described above. This upcoming meeting is designed to provide useful climate information to the suite of actors concerned with food production, including crops, livestock, and water resource management.

In the coming months, NOAA will undertake an assessment of the crisis in Zimbabwe, and develop a series of scenarios that will integrate across the environmental and socio-economic conditions. Such scenarios will be offered as a contribution to efforts of the international humanitarian community to plan for potential developments in this evolving complex crisis. This type of research is representative of NOAA's efforts to sponsor problem-driven, integrative research and capacity building activities. Our objective is to provide a meaningful contribution to improvements in the areas of humanitarian relief, food security, political stability and associated international security issues, public health, regional trade, and long-term sustainable development in Zimbabwe

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*(Endnotes)*

[1] US Agency for International Development, Bureau for Democracy, Conflict and Humanitarian Assistance (DCHA), Office of Foreign Disaster Assistance (OFDA). July 26, 2002. "Southern Africa - Complex Food Security Crisis Situation Report #9 (FY) 2002.

[2,3] LS Unganani et al. 1998. Seasonal Climate Forecasts for Farm Management in Zimbabwe: Proceedings of a Training Programme on the Interpretation and Use of Seasonal Forecasts for Agricultural Extension Workers in Zimbabwe.

[4] Glantz, Michael, et. al. 1997. Preparing for El Niño: What role for forecasts? Environment. No. 10, Vol. 39.

[5] International Research Institute (IRI) for climate prediction. 2002. El Niño Alert. July 17, 2002. http://IRI.LDEO.COLUMBIA.EDU/ and NOAA, WWW.NOAA.GOV.

[6] This forum, known as the Southern Africa Regional Climate Outlook Forum (SARCOF), convenes its major session once a year to consider the impact of climate conditions on the

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